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Schopp

Cache Optimized Logical Partitioning of a Symmetric Multi-Processor Data Processing System

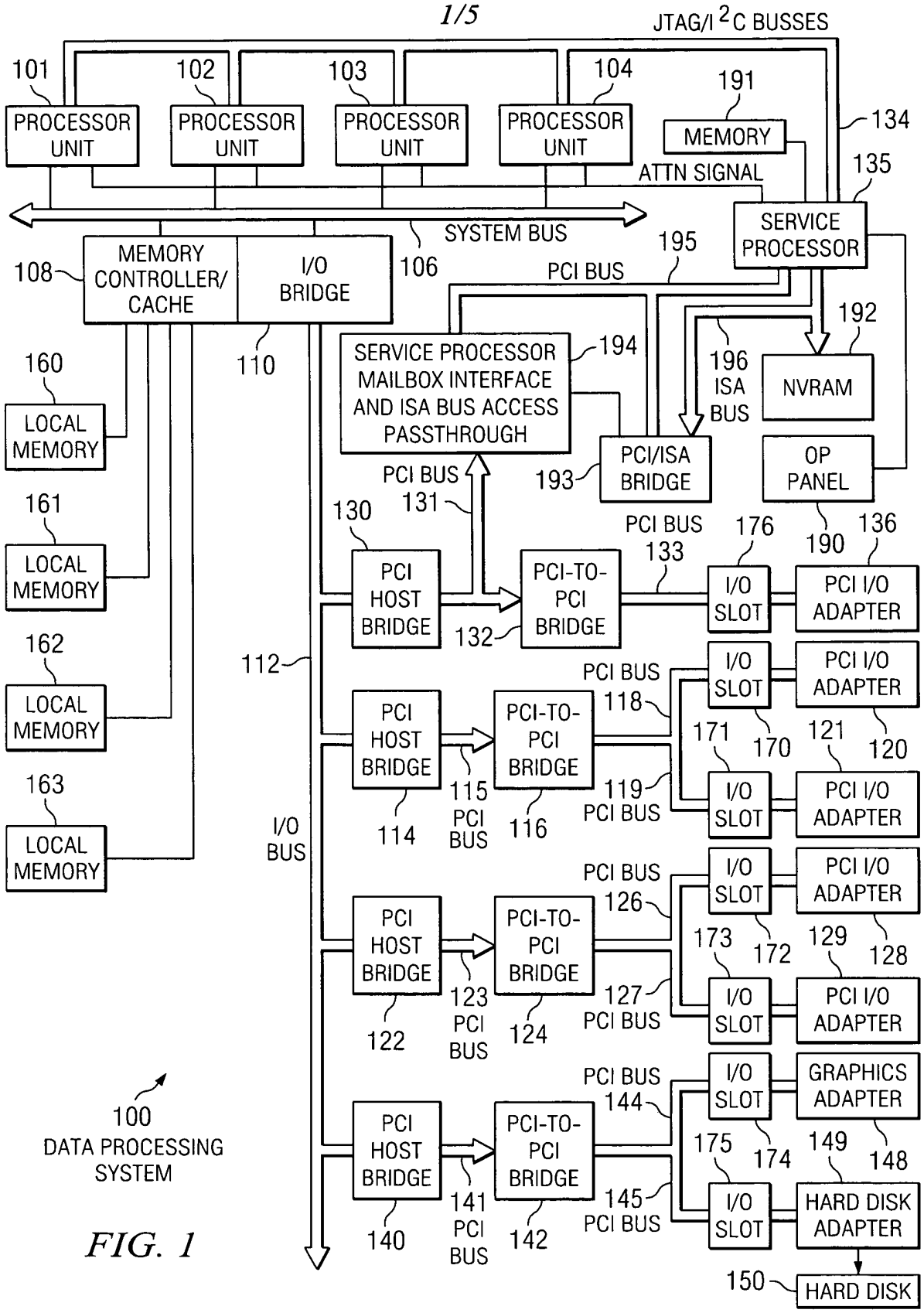


FIG. 1

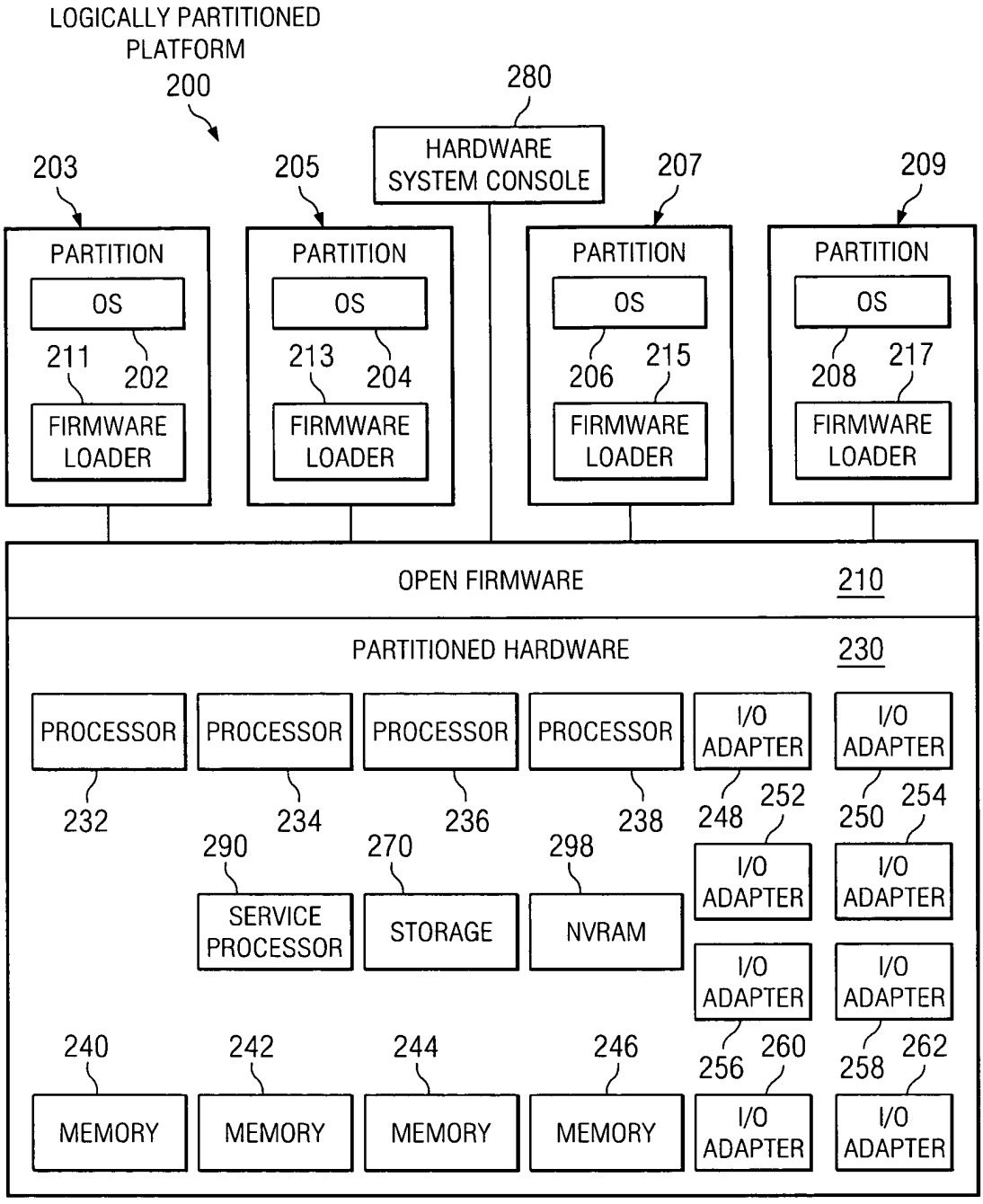
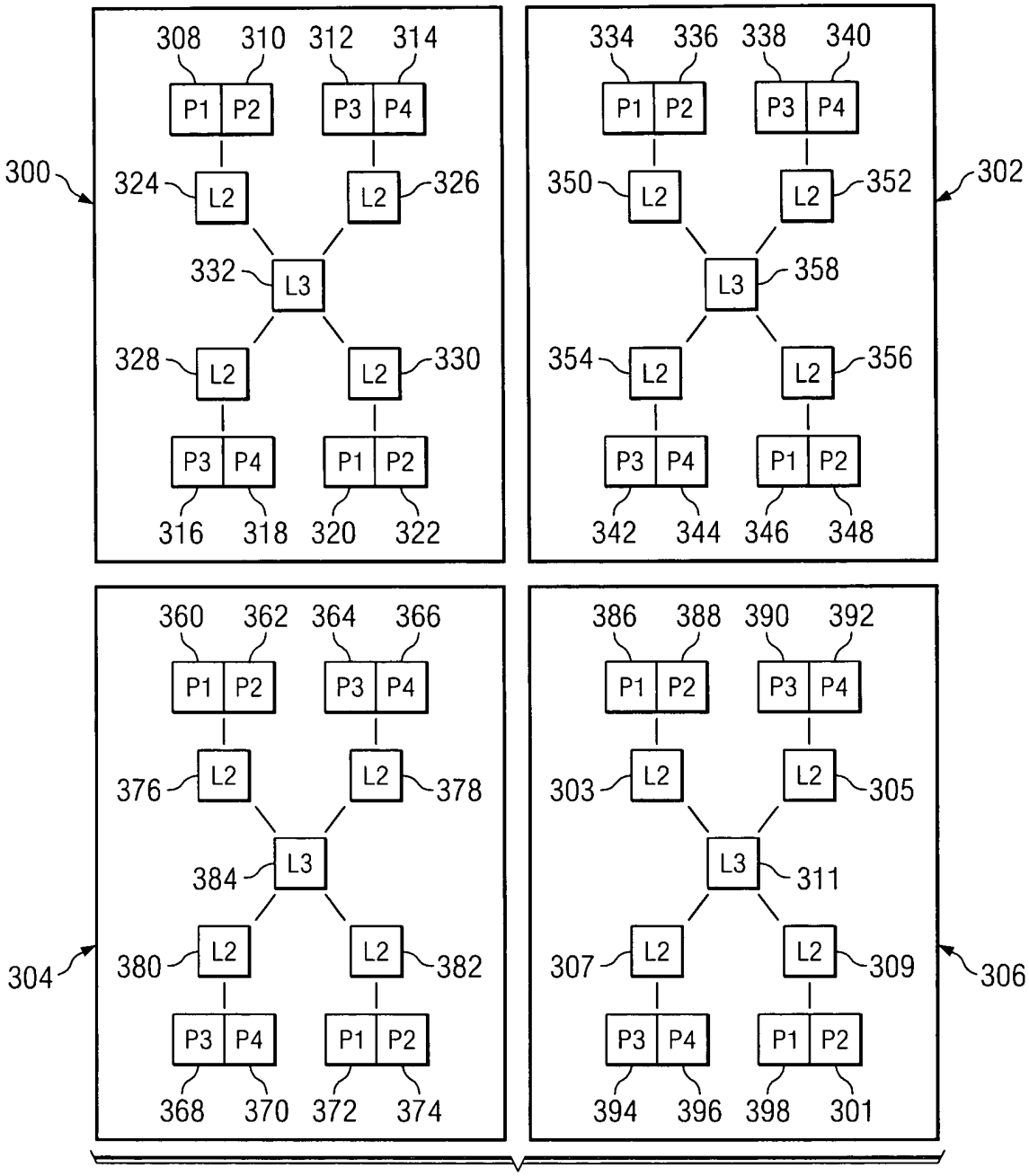

LOGICALLY PARTITIONED PLATFORM
200
280
HARDWARE SYSTEM CONSOLE
203
205
207
209
PARTITION
OS
211
202
213
204
206
215
208
217
FIRMWARE LOADER
OPEN FIRMWARE
210
PARTITIONED HARDWARE
230
PROCESSOR
232
234
236
238
I/O ADAPTER
248
252
250
254
260
256
258
262
290
270
298
SERVICE PROCESSOR
STORAGE
NVRAM
240
242
244
246
MEMORY

FIG. 2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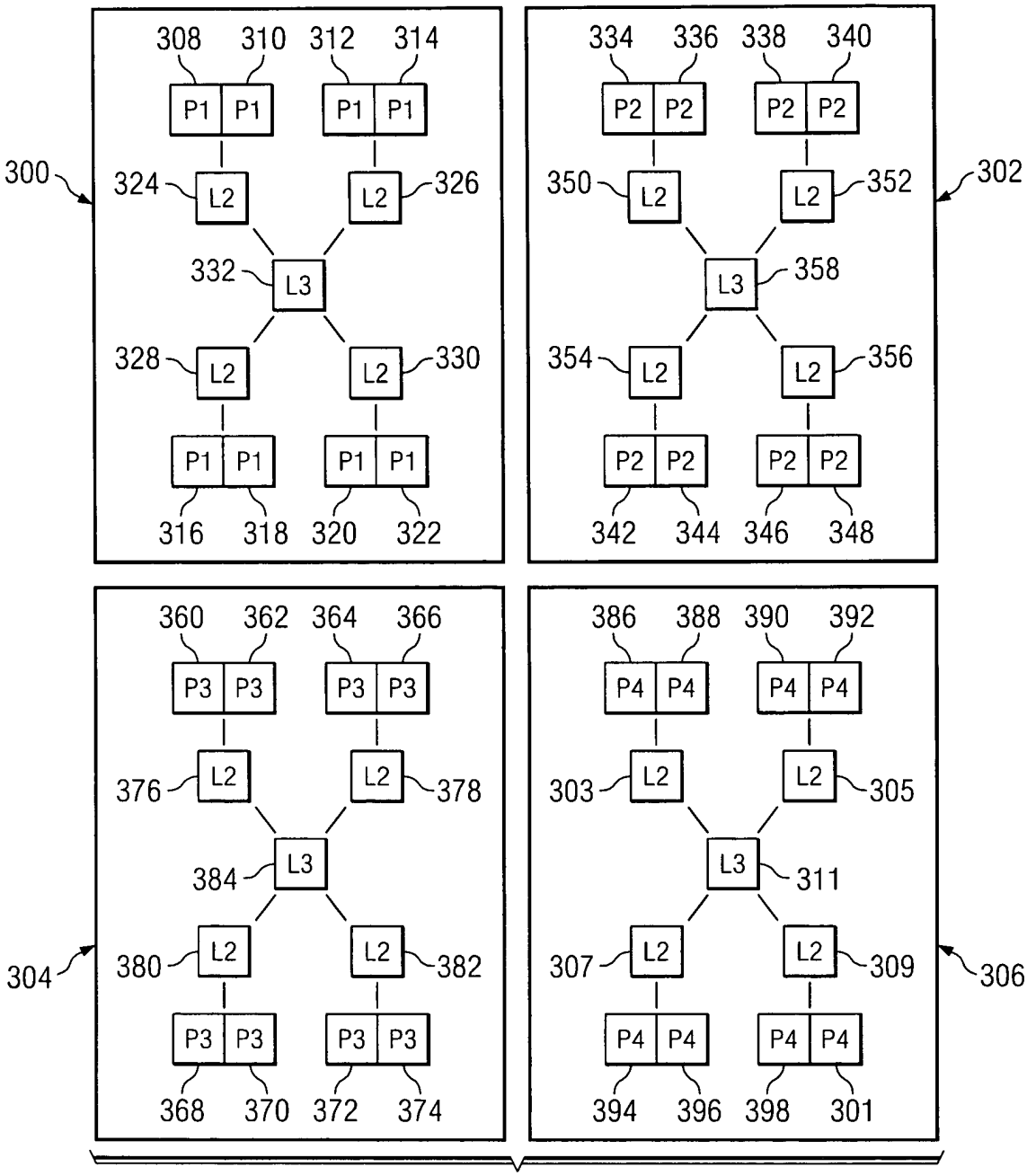
P1
P2
P3
P4
L2
L3

FIG. 3A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311
P1
P2
P3
P4
L2
L3

FIG. 3B

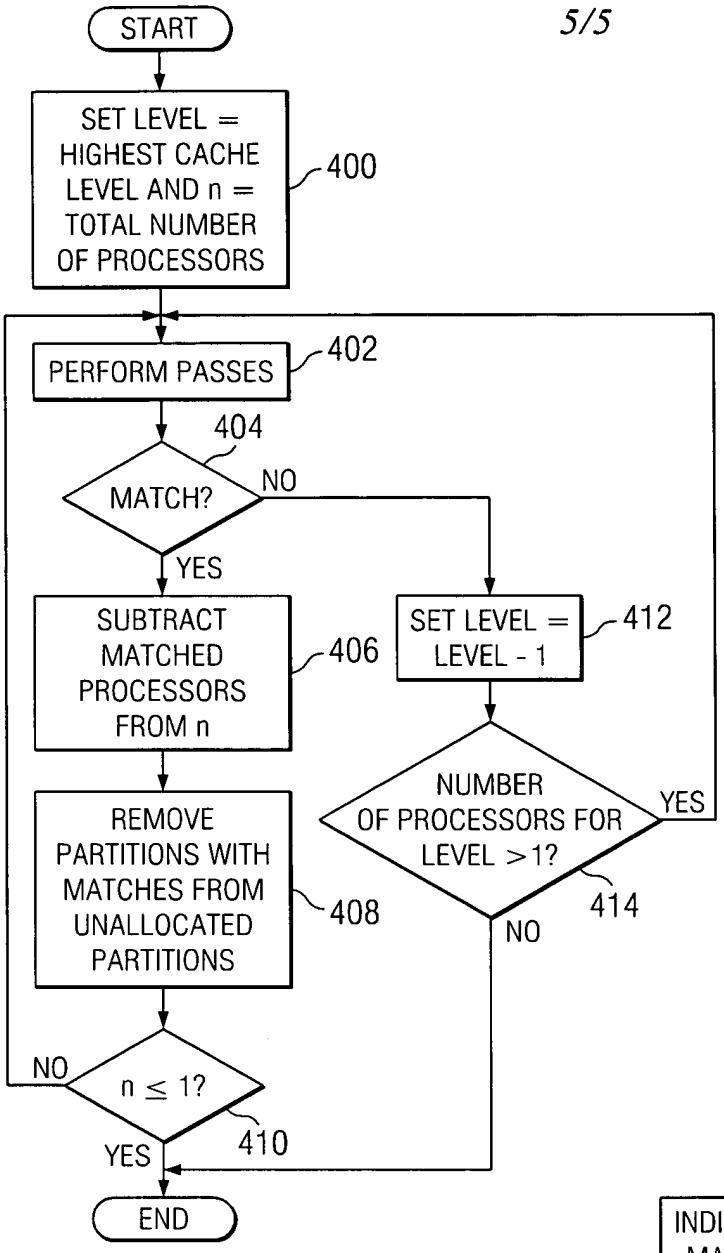
START
SET LEVEL = HIGHEST CACHE LEVEL AND n = TOTAL NUMBER OF PROCESSORS
400
PERFORM PASSES
402
404
MATCH?
NO
YES
SUBTRACT MATCHED PROCESSORS FROM n
406
SET LEVEL = LEVEL - 1
412
REMOVE PARTITIONS WITH MATCHES FROM UNALLOCATED PARTITIONS
408
NUMBER OF PROCESSORS FOR LEVEL >1?
YES
414
NO
NO
n ≤ 1?
410
YES
END

FIG. 4

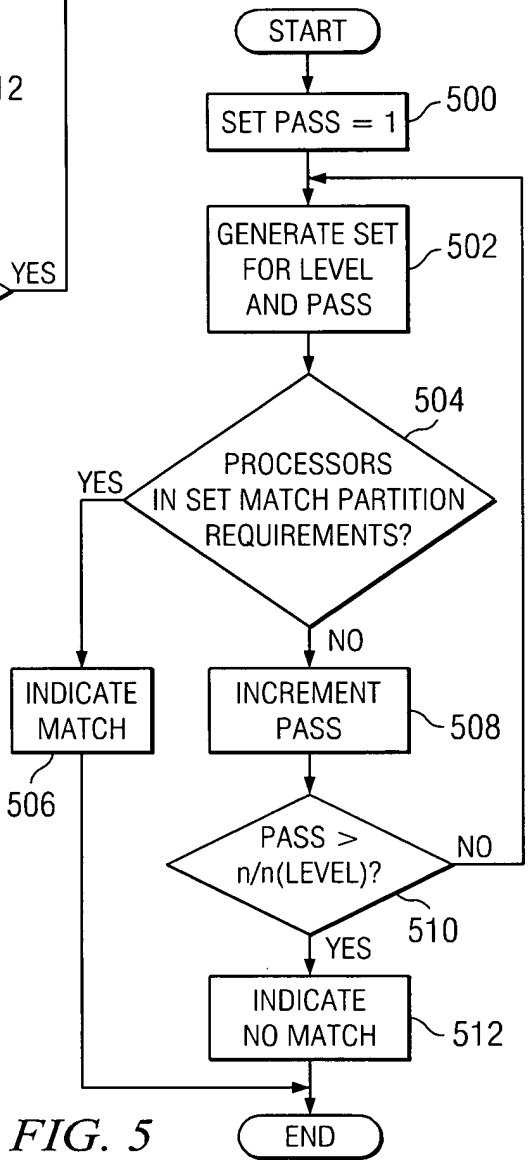
START
SET PASS = 1
500
GENERATE SET FOR LEVEL AND PASS
502
504
PROCESSORS IN SET MATCH PARTITION REQUIREMENTS?
YES
NO
INDICATE MATCH
506
INCREMENT PASS
508
PASS > n/n(LEVEL)?
NO
510
YES
INDICATE NO MATCH
512
END

FIG. 5